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**U.S. ARMY-BAYLOR UNIVERSITY
GRADUATE PROGRAM IN HEALTH CARE ADMINISTRATION**

**MILITARY CERTIFIED REGISTERED NURSE ANESTHETISTS:
WHAT ARE THE ECONOMICS OF INCREASING THEIR INCENTIVE
SPECIALTY PAY DEPARTMENT OF DEFENSE WIDE?**

**A GRADUATE MANAGEMENT PROJECT
SUBMITTED TO COLONEL SCOTT GARNER,
LIEUTENANT COLONEL JAMES FAIRLESS, AND DR. KARIN ZUCKER
IN CANDIDACY FOR THE DEGREE OF
MASTER OF HEALTHCARE ADMINISTRATION**

**BY
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**OFFICE OF THE ASSISTANT SECRETARY FOR DEFENSE
(HEALTH AFFAIRS)**

PENTAGON, VIRGINIA

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This Graduate Management Project (GMP) is dedicated to my family, friends, classmates, the faculty of the U.S. Army-Baylor University Graduate Program in Health Care Administration, and my coworkers at Department of Defense (Health Affairs) who have supported me through the ups and downs of the program and completing this GMP. They were always there to encourage me, support me, laugh with me, and answer thousands of questions.

I would like to give special thanks to the Army Nurse Corps for the opportunity to attend the U.S. Army-Baylor University Graduate Program in Health Care Administration.

Military Certified Registered Nurse Anesthetists:

What Are The Economics Of Increasing Their Incentive Specialty Pay Department of Defense Wide?

ABSTRACT

The Department of Defense (Health Affairs) (DoD(HA)) is unable to recruit and retain sufficient numbers of military Certified Registered Nurse Anesthetists (CRNAs) to meet and maintain its authorized strength. The shortage of military CRNAs increases the cost of providing health care to eligible beneficiaries, decreases access to medical care within the direct care system, and negatively impacts the ability to meet wartime readiness requirements.

In 1992, the Senate Appropriations Committee of the 102nd Congress directed DoD(HA) to evaluate its need for military CRNAs and to consider the efficacy of increased incentive specialty pay for attracting CRNAs to military service and retaining military CRNAs on active duty. This graduate management project evaluates the economics of increasing the Incentive Specialty Pay (ISP) currently paid to military CRNAs from \$6,000 to \$15,000 and the expected increase in retention of military CRNAs.

In March 1994, Dr. John Bircher, a DoD(HA) statistician, prepared the "Certified Registered Nurse Anesthetists Incentive Specialty Pay Study", also called the elasticity study, which explored this problem. The findings of the elasticity study showed that increasing the military CRNA ISP to \$15,000 would increase the retention of military CRNAs by 21 percent. The DoD(HA)'s marginal cost to retain a military CRNA would be \$51,400.

In 1985, civilian CRNAs' salaries started increasing rapidly causing a problem in salary disparity between military and civilian CRNAs. This resulted in CRNAs leaving the military and caused a shortage within DoD. Presently, the DoD(HA) is replacing military CRNAs with civilian CRNAs, and military and civilian anesthesiologists. The cost of these substitutes for military CRNAs is expensive, and civilian substitutes can not meet the military's readiness requirements because they are not deployable. The cost of procuring substitutes or training additional CRNAs is more expensive than increasing the CRNA ISP.

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LIST OF ABBREVIATIONS

AANA	American Association of Nurse Anesthetists
AMEDD	Army Medical Department
CHAMPUS	Civilian Health and Medical Program for the Uniform Services
CRNA	Certified Registered Nurse Anesthetist
DoD	Department of Defense
GMP	Graduate Management Project.
HSC	Health Services Command, United States Army Medical Department
ISP	Incentive specialty pay
OASD(HA)	Office of the Assistant Secretary of Defense (Health Affairs)
RMC	Regular military compensation

GLOSSARY

Anesthesiologist. Physician who specializes in anesthesiology

Anesthesiology. The branch of medicine which uses drugs or agents to abolish the sensation of pain, achieve muscular relaxation, reduce fear and anxiety, and produce amnesia for surgery or other event.

Authorized or budgeted strength. The number of personnel by job the DoD has been approved to keep on active duty

Military beneficiary. Person eligible to receive care through the military health services system (some may be eligible to receive care in the MTF medical treatment facility only or through CHAMPUS also)

Nurse anesthetist. A registered nurse trained to provide anesthesia

Regular military compensation. The sum of basic pay, basic allowance for quarters (BAQ)(including any variable housing allowance (VHA)), basic allowance for subsistence (BAS), and the federal tax advantage of BAQ and BAS.

Wartime readiness requirement. The number of trained personnel needed in time of military conflict as predicted by a Joint Chief of Staff's scenario.

CHAPTER I

INTRODUCTION

Rationale for the Study

Health care is in a turbulent time in the United States. The nation is struggling to provide access to all Americans while simultaneously trying to control the cost of health care. The Department of Defense (Health Affairs) (DoD(HA)) is also struggling to provide high quality health care, access to all beneficiaries, and cost containment during a time of decreasing resources and manpower. As the DoD "down sizes" or "right sizes", the beneficiary population and use of the military health care system are not decreasing proportionately.

The DoD(HA) is unable to recruit and retain sufficient numbers of military certified registered nurse anesthetists (CRNAs) to meet and maintain its authorized or budgeted strength. CRNAs are professional nurses who have additional training in the delivery of anesthesia. After completion of their accredited nurse anesthesia training, nurse anesthetists are required to pass a national certifying exam to be eligible to practice as a CRNA. CRNAs are considered physician extenders, and they increase access to anesthesia

care at a lower cost. The shortage of military CRNAs increases the cost of providing health care to eligible beneficiaries, decreases access to medical care within the direct care system, and negatively impacts the ability to meet wartime readiness requirements.

The Nurse Corps of the U.S. Army, Navy, and Air Force are requesting an increase to the Incentive Specialty Pay (ISP) to increase the retention of military CRNAs. The annual ISP paid to military CRNAs is currently \$6,000, and they are requesting an increase in the ISP to \$15,000.

In the fall of 1992, the Senate Appropriation Committee of the 102nd Congress directed DoD to evaluate its need for military nurse anesthetists and to consider the efficacy of increased incentive pay for attracting CRNAs to the military and retaining CRNAs on active duty.

This graduate management project (GMP) is a cost benefit analysis case study that evaluates the cost of increasing the military CRNA ISP to \$15,000 and the expected benefit in retention of military CRNAs.

General History Of Nurse Anesthetists

Surgical anesthesia began in the mid-nineteenth century in the United States. With the discovery of anesthesia, it was determined that pain could be controlled during surgery. Infections and deaths caused by them were reduced with the understanding of infection and the development of the

"antiseptic conscience".¹ Pain control and decreased morbidity resulted in an increase in the number and types of surgeries performed.² With this increase in surgery, a demand was created for someone to administer anesthesia. Out of this demand, the question arose regarding "Who should administer anesthesia?".

In its early history, administering anesthesia was a difficult task and the financial reward was insufficient for physicians to pursue anesthesiology. Still, surgeons needed competent reliable professionals to administer anesthesia and nurses were recruited to carry out this task under the instruction and supervision of surgeons.³ Anesthesia became the first nursing specialty.

Early historical accounts of nurse anesthetists date from work at the Mayo Clinic under the direction of Dr. William W. Mayo in the late 1800's. Not until the 1920's, did physician administered anesthesia (or anesthesiology) begin to emerge. Although the history of anesthesia by the anesthesiology community largely ignores contributions of nurses anesthetists, their contributions were significant. As early as 1893, when a nursing textbook devoted an entire

¹Bankert, Marianne, Watchful Care: A History of America's Nurse Anesthetists. New York: Continuum Publishing Co., 1989, 19.

²Ibid.

³Ibid, 24.

chapter to the administration of anesthesia.⁴

Nurse anesthetists and anesthesiologists perform the same tasks in anesthetizing a patient. Although, the physician has more in depth medical training and is more highly compensated than is a nurse anesthetist. The objective of this case study is not to explore the conflicts between nurse anesthetists and anesthesiologists, but it is important to be aware that problems exist.

History Of Nurse Anesthetists In The Military

In 1914, during World War I, nurse anesthetists first served in the military. Many of them administered anesthesia during surgery in military hospitals. World War I was the also first time that the U.S. Army and Navy trained nurse anesthetists for wartime service. American nurse anesthetists were responsible for introducing gas anesthesia to the English and French anesthesia providers and for training them in its use. This unique contribution allowed anesthesia to be administered near the front lines in addition to in the base hospitals. During World War II, there were military and civilian training programs for nurse anesthetists.

In 1966, during the Vietnam conflict, CRNAs were first drafted into the military under a special draft of male

⁴Ibid, 25.

professional nurses by the Department of Defense.⁵

Although, many female nurses volunteered for military service, only male nurses were drafted. Prior to the Vietnam draft, all CRNAs' service in or for the military had been voluntary.⁶

Incentive Specialty Pay Implementation In 1989

The initial ISP for military CRNAs was implemented in 1989. It was and remains \$6,000. The ISP has contributed to the retention of military CRNAs; however, the increase in civilian salaries currently has outpaced the \$6,000 CRNA ISP.

Statement Of The Problem

The DoD(HA) is unable to recruit and retain sufficient number of military CRNAs to meet its authorized (budgeted) strength. The problem is to determine if an increase from \$6,000 to \$15,000 in the CRNA ISP will improve retention and be cost effective.

Purpose

The purpose of this graduate management project is to evaluate whether it is cost effective to increase the CRNA ISP to \$15,000, and whether the increased ISP will result in

⁵Ibid, 144.

⁶Ibid.

greater retention of military CRNAs. The following items will be addressed:

1. A comparison of the job requirements and salary of military CRNAs to that of civilian CRNAs;

2. The reasons why military CRNAs decide to leave the military;

3. The alternatives to military CRNAs peace and wartime needs, who can substitute for military CRNAs and what are the cost for these substitutes?;

4. The cost of one military CRNA training program and the evaluation of the problems in increasing the number of students in military training programs;

5. The cost of increasing the military CRNA ISP to \$15,000; and

6. An evaluation of the impact of increasing the ISP to \$15,000 on retention.

The instruction from the DoD(HA) is to evaluate the increased retention of military CRNAs based on a \$15,000 ISP. This GMP evaluates (a) the cost of increasing the CRNA ISP by \$9,000 for all CRNAs and (b) the cost of increasing the CRNA ISP by \$9,000 for only those who have completed a four year obligation for their training. It does not explore the cost issue of the retirement annuity for CRNAs for several reasons. The DoD(HA) has directed that the cost

issue of the retirement annuity not be included in the CRNA ISP Report to Congress.⁷

Background

In 1985, civilian CRNAs' salaries started increasing more rapidly than military CRNAs' salaries. As a result of what became a significant salary gap, military CRNAs began leaving the military soon after completion of their training obligations. This is creating a shortage of experienced providers and senior leadership for the military CRNAs. Further with the increase in CRNA pay in the civilian market, the cost of obtaining substitutes for military CRNA care is very expensive for the DoD.⁸

The skilled, military-trained CRNAs are in high demand in the civilian market. Military CRNAs usually have a variety of experience, both in medical centers and small hospitals because of frequent job relocations. Military CRNAs are also very flexible and knowledgeable of newer procedures and treatments. In addition, the military trains its CRNAs in regional anesthesia, a skill not as readily available in civilian trained CRNAs.

⁷Direction from Colonel Scott Garner, Director, Office of the Assistant Secretary of Defense(Health Affairs)(Health Service Operation)(Health Policy).

⁸Information obtained from Lieutenant Commander Thomas McMahan, Office of the Assistant Secretary of Defense(Health Affairs)(Health Service Operation)(Health Policy).

The demands on the civilian provider are fewer than those on the military nurse anesthetists. The military nurse anesthetist, in addition to possessing anesthesia skills that meet the standard of care, is also required to meet the military, physical, and readiness requirements of their perspective Service.

The training of military CRNAs is predominantly accomplished by the Nurse Corps of the United States Army, the United States Navy, and the United States Air Force (the Services). This Service provided training is necessary because of the limited success in recruiting CRNAs.

Literature Review

There are several literature sources supporting this case study that indicate there is a shortage of both civilian and military CRNAs. As a result of this shortage, military CRNAs are finding that salaries are more lucrative in the civilian marketplace.

A manpower study,⁹ prepared in February 1990, by William F. Raub, Deputy Director of the National Institutes of Health, predicted that by the year 2010 there will be a shortage of between 12,000 and 32,000 CRNAs. The increased demand is based on technological advances that positively impact on the need for anesthesia care. Supply is based on

⁹Raub, William F., "Study of Nurse Anesthesia Manpower Needs," Department of Health and Human Services, Public Health Service, and National Institutes of Health; February, 1990.

the current and predicted number of nurses who complete nurse anesthesia training programs, and the work life expectancy of CRNAs. The economic implications for the DoD(HA) will be a reduction in supply of military CRNAs and, ultimately, an increase in health care costs, both for the DoD and the nation.

Table 1 below shows DoD Fiscal Year 1994 authorizations for military CRNAs and the military CRNA strength as of March 1994.

Table 1

Nurse Anesthetists¹⁰

<u>Service</u>	<u>Authorizations</u>	<u>Strength</u>	<u>% Fiill</u>
Army	273	213	78%
Navy	143	126	88%
Air Force	<u>263</u>	<u>197</u>	<u>74%</u>
DoD	<u>679</u>	<u>536</u>	<u>79%</u>

The DoD(HA) in fiscal year 1993 authorized (budgeted) for 398 military anesthesiologists. The military anesthesiologist strength (number of personnel on active duty on the September 30, 1993) was 445 (which represents 112% of authorized strength).

The total budgeted strength for military CRNAs and

¹⁰Information for Table I was provided by the Services's Offices of the Surgeons General based on military CRNA strengths as of March 1994 and using fiscal year 1994 authorizations.

military anesthesiologists is 1,077 (personnel slots). The total inventory using the latest available data on CRNA and military anesthesiology inventory from the above sources is 981. The authorized (budgeted) strength is 1,077. This provides a 91% staffing overall for military CRNAs and anesthesiologists.

In 1985, military and civilian CRNA pays were equal; by 1990, there was a pay gap of \$27,000, and by 1992 the pay gap was \$34,000.¹¹ The 1989 Proud to Care study, done by the Army Nurse Corp, showed the number one reason for CRNAs leaving the military "was that civilian jobs pay more than the Army".¹² The shortage of nurse anesthetist providers is caused by closure of more than one half of the accredited nursing schools between 1976 and 1986 and a reduction in the graduates by more than one third.¹³ The need for CRNAs has increased, because of more complicated surgery, new drugs, and more invasive monitoring devices and techniques. The demand for obstetrical anesthesia has also increased. Military anesthesiologists are filling some of the military

¹¹Bircher, John J. 1994. Certified Register Nurse Anesthetists Incentive Special Pay Study. Office of the Assistant Secretary of Defense (Health Affairs).

¹²Kennedy, Colonel Terris. Information Paper - Retention Issues. Department of the Army Office of the Surgeon General. July 26, 1993.

¹³Cromwell, Jerry and Margo Rosenbach. 1991. The Impact of Nurse Anesthetists on Anesthesiologist Productivity. Medical Care. Vol 28, 2.

CRNA positions due to the shortage. The DoD Joint Healthcare Manpower Standard¹⁴ makes military anesthesiologists and nurse anesthetists providers positions interchangeable. What is this saying? The department head in larger facilities is a medical doctor of anesthesia, but many of the other positions can be filled with anesthesiologists or nurse anesthetists. What is the best mix? Where does DoD get the most benefit for the money? How much does it cost for an anesthesiologist versus a nurse anesthetist? This study will address the cost difference between CRNAs and anesthesiologists.

It is rarely possible to recruit a CRNA. Therefore, the Services have established their own training programs.

Training Programs

The Services presently have three nurse anesthetist training programs with a fourth program proposed. In addition, they have a scholarship program for nurse anesthetist training. Still, they are unable to fulfill their demands because of the difficulty in recruiting and retaining military CRNAs. Further, the nurse anesthesia training programs are competing with anesthesiology training programs to meet the necessary clinical requirements.

¹⁴Department of Defense Joint Healthcare Manpower Standard (JHMS); DoD 6025.12-STD, dated October 1992, 3.

The U.S. Army's Nurse Anesthetist Training Program

The U.S. Army's nurse anesthetist training program is located at the Army Medical Department Center and School (AMEDD program) at Fort Sam Houston, Texas, and is affiliated with the University of Texas at Houston. The AMEDD program is a 27-month program that consists of a nine-month didactic phase followed by an 18-month clinical phase. Upon successful completion of the clinical phase, candidates are awarded a Master of Science in Nursing. Officers completing this program incur a six-year obligation to the U.S. Army.¹⁵

The U.S. Navy's Nurse Anesthetist Training Programs

The U.S. Navy has two overlapping nurse anesthetist training programs both located in Washington, D.C. The first is affiliated with George Washington University (the GW program). It is a 24-month program that consists of a one-year didactic phase followed by a one-year clinical phase. Upon completion of the clinical phase, candidates for graduation are awarded a Master of Science in Allied Health. The Service obligation for this training program is four years. When the current classes graduate this affiliation will be terminated. As of August 1, 1994, the U.S. Navy military CRNA training program will be affiliated

¹⁵Telephone interview with Colonel Jill Keeler, Director of the U.S. Army Nurse Anesthetist Training Program, conducted by Major Patricia M. Boone. March 1994.

with Georgetown University (the Georgetown program).¹⁶ It is a 30-month program that consists of a one year didactic phase followed by a clinical phase which has been increased to 18-months. The graduates will be awarded a Master of Science in Nursing. The Service obligation for this training at Georgetown is four and one-half years.

The U.S. Air Force's Nurse Anesthetist Training Program

The U.S. Air Force's nurse anesthetist training program is affiliated with the University of Texas at San Antonio and is located in San Antonio. It is a two-year program that consists of a one-year didactic phase followed by one-year clinical rotation.¹⁷ Upon completion of the clinical rotation, candidates for graduation are awarded a Master of Science in Nursing. The U.S. Air Force obligation for this training is four years.

Other Training Programs and Requirements

A further review of the literature revealed the Health Professional Scholarship Program (HPSP) which commissions

¹⁶Telephone interview with Captain Burns, the Director of the U.S. Navy's Nurse Anesthetist Training Program conducted by Major Patricia M. Boone, April 1994.

¹⁷Telephone interview with Colonel Wayne Ellis, Director of the U.S. Air Force's Nurse Anesthetist Training Program conducted by Major Patricia M. Boone, March 1994.

civilian nurse anesthetist students.¹⁸ The HPSP pays for tuition and books and provides a monthly stipend for two years of training to its students. The military obligation incurred for this training is three years. In 1993, the U.S. Air Force had 16 and the U.S. Army had two students enrolled in this program.

Also, the University of Health Sciences Graduate School of Nursing (USUHS), located at Bethesda, Maryland, is scheduled to start a nurse anesthetist training program in the summer of 1994.¹⁹ USUHS Graduate Nursing Program's plan for the first year is to accept nine students. This program is scheduled to be a 27 month program with an obligation based on the policy of the student's individual Service.

These programs are expanding to increase the number of CRNAs on active duty in order to meet the authorized strength. Class size is limited by the availability of clinical sites. Difficulties with beginning or expanding a CRNA training school are providing clinical sites to meet the requirement for certification and complying with the student instructor ratio required by the AANA, which has been the national accreditor of nurse anesthetist education

¹⁸Personal interview with Lieutenant Colonel Mike Feeley, Office of the Assistant Secretary of Defense(Health Affairs) (Health Service Operations)(Health Policy) conducted by Major Patricia M. Boone, May 1993.

¹⁹Fact Sheet, Uniform Services University of Health Sciences (USUHS) Graduate School of Nursing, March 2, 1994.

since 1955.²⁰ There is a shortage of clinical sites because these students are in direct competition for cases with physicians who are training to be anesthesiologists.

As stated above, the obligation for training of military CRNAs is different for each of the Services. This does not present a problem, as long as the Services continue to receive a sufficient number of qualified applicants for training. The obligation for training will become an issue if the \$15,000 ISP is approved after the Service obligation for training is completed. The compensation (pay and ISP) potentially will be different between Services as a result of the difference in length of the Service obligation.

The DoD Directive 6000.2, dated April 8, 1988, addresses the minimum terms of service and active duty obligations for health services officers. Service obligations for training of physicians and other health service officers are different. The intent of this DoD directive is not to impact on pay, but to mandate a minimum Service obligation for training and then to allow the Services to initiate further policy directives related to the obligations.

Certified registered nurse anesthetists are required to complete 40 hours of continuing education every two years to maintain certification. This impacts upon time for military

²⁰American Association of Nurse Anesthetist's Report of the National Commission on Nurse Anesthetist Education, December, 1990, pg 7.

training, and, especially for the CRNA in remote areas, is expensive to obtain this training. The cost of this continuing education is much more expensive than the usual nursing programs. This higher cost can be easily observed by looking at professional journals and brochures advertising continuing nursing education.

Compensation

The Rand Report²¹ on military compensation states that the goal of military compensation is to enable the military to meet its authorized strength, the necessary mix, and the readiness mission. Some of the key points this report raises for consideration are:

- An organization should pay each individual at least as much as his next best opportunity;
- Compensation should rise with grade or hierarchical level to motivate greater skill development and performance;
- Individuals who work in hazardous occupations that have greater chance of death, or work in unpleasant conditions should receive more compensation than those whose occupations provide amenities;
- Promotion can increase individual motivation and performance; and
- Individuals have different abilities to perform different jobs, and better performers should be promoted

²¹Rand Analysis on Military Compensation. 1990.

while those who are not promoted should not be automatically dismissed.

The analysis within the Rand Report indicates that the structure of compensation should differ across levels and occupations. The analysis argues that personnel in military specialties with greater specific training should have flatter pay profiles for experience, while those in specialties requiring primarily generalized training should have steeper profiles. The analysis also discusses increasing in-grade compensation based on satisfactory performance.²²

Based on the Rand Analysis, CRNAs should have a flatter pay profile because of the specialty training they have. This would support a bonus which flattens out the pay profile. Other factors which indicate that increased pay is necessary to meet the authorized military strength include their (a) unpleasant working conditions around blood and trauma, (b) exposure to hazardous body fluids, (c) difficult working hours (including nights, weekends, and holidays), and (d) excellent opportunities for higher pay in the civilian market.

²²Ibid.

CHAPTER II

METHODS AND PROCEDURES

The methodology for this graduate management project started with a literature review, which looked at CRNA pay and benefits in both the military and civilian arena, current and predicted shortages, and the compensation rationale. Personal interviews were done to evaluate the current military CRNAs retention problems. A cost comparison between the cost of CRNAs and anesthesiologists, both military and civilian, was done. Thereafter, a cost benefit analysis was done to show what the actual costs of increasing the CRNA ISP are.

The interviews were done by telephone or in person. Personnel interviewed included military and civilian CRNA leaders, active duty military CRNAs, CRNAs who have recently left the military prior to retirement, representatives of the American Association of Nurse Anesthetists (a national CRNA organization), and representatives of the Office of the Secretary of the Army (Manpower and Reserve Affairs). As the interviewer, I introduced myself, using my rank and position, and explained the purpose of the study, which is to explore the problem of CRNA retention. I made no

promises that the results of the study would support the increase in CRNA ISP to \$15,000, but explained that I would let the findings and data speak for themselves. The interviews were unstructured but covered the following topics: (a) pay, (b) quality of life issues, (c) promotion opportunities, (d) practice issues including the working relationship with anesthesiologists and the department of nursing, (e) why peers are staying in or leaving the military, and (f) what perceived civilian opportunities there are. The interviewees were given the opportunity to add anything they believed important. Fifteen people were interviewed.

A cost comparison with a trend analysis of the average salary of the military CRNA and his/her civilian counterpart was done. The average salary of the military CRNA was based on the average rank of CRNAs DoD wide, using regular military compensation plus the \$6,000 ISP. Regular military compensation is the sum of basic pay, basic allowance for quarters, including any variable housing allowance, basic allowance for subsistence, and the federal tax advantage of the basic allowance for quarters and subsistence. The civilian salary was taken from the American Association of Nurse Anesthetists annual survey results.

A cost comparison between filling a position with a military anesthesiologist and filling one with a military CRNA was also done. This comparison was based on the

average salary of a military CRNA and military anesthesiologist who received regular military compensation and applicable bonuses for FY 94.

This study looked at the requirement for nurse anesthetists in the military and at the cost of providing that uniformed care, and compared it with (a) the cost of providing DoD civilian care, (b) the cost of contracting CRNA care, and (c) the cost of training CRNAs. An evaluation of the elasticity (forecasting) study²³ of the effect of the \$15,000 ISP on retention is included. This study utilized secondary data and verified the credibility of the earlier elasticity study data. This study does not address malpractice insurance because it is rarely looked at in compensation discussions.²⁴ Further, there is disagreement between the Office of General Counsel and the DoD(HA) on the actual requirements for malpractice insurance coverage of CRNA providers under different employment options.²⁵

²³Major Patricia M. Boone contributed to the elasticity study through data collection for Dr. John Bircher.

²⁴Information obtained from Lieutenant Commander Thomas McMahan, Office of the Assistant Secretary of Defense(Health Affairs)(Health Service Operation)(Health Policy).

²⁵Information obtained from Lieutenant Commander Thomas McMahan, Office of the Assistant Secretary of Defense(Health Affairs)(Health Service Operation)(Health Policy).

CHAPTER III

THE RESULTS

Retention

The DoD(HA) is experiencing difficulty in recruiting and retaining military CRNAs. The problem of recruiting and retaining military CRNAs relates to salary, job requirements, lack of control over assignments, and the perception of the lack of promotional opportunities. As a result of these problems, there is a shortage of military CRNAs. The shortage of military CRNAs effects the CRNAs that are currently serving by increasing the burden (work) of each. Military CRNAs work next to civilian CRNAs who have less job responsibility, work fewer and better hours, and are more highly paid. The disparity in pay and responsibilities causes dissatisfaction in the military CRNA. Further, because of their excellent training and experience, the military CRNAs are being sought by civilian agencies.

Military CRNAs are being offered \$80,000 per year at graduation with no experience by civilian agencies, according to Colonel Wayne Ellis, Director of the Air Force CRNA Training Program. Compare this \$80,000, without

benefits, to \$52,000 per year including benefits for a new military CRNA. Experienced military CRNAs are being offered as much as \$110,000 to work straight days with no call.²⁶ Some CRNAs with as many as 17 1/2 years of service are leaving the military for the pay and benefits (comforts) offered in civilian practice.

A comparison of the military CRNA job requirements with the civilian CRNA job requirements is in appendix A. The military CRNA is a more autonomous anesthesia provider and has a higher level of education than that required of the civilian CRNA. The military CRNA is able to practice independently and to administer anesthesia to all age groups. The majority of military CRNAs are credentialed to provide regional anesthesia. Because of the shortage of military providers, military CRNAs tend to work longer hours and pull more call without receiving additional compensation. Civilian CRNAs are typically compensated for overtime work and call. Military CRNAs have little control over the location or duration of assignments. There is no guarantee that military CRNAs will be funded for continuing education which is mandated for the continuance of their nurse anesthetists certification which is required to legally practice nurse anesthesia.

Promotional opportunities for the military CRNAs are a

²⁶Information obtained from Captain Paula Varney, Assistant Director, Eisenhower Army Medical Center, Phase II U.S. Army Nurse Anesthetist Training Site.

problem across all Services. Many personnel do not have time for, or are not selected to attend, the military courses necessary to be competitive for promotion. Although steps have been taken to improve the promotion rate for the CRNA specialty, the authorized senior ranks are not always filled. The lack of senior CRNAs can be attributed to time-in-grade requirements for promotion and the job opportunities in the civilian world. The shortage of senior CRNAs results in a shortage of leadership and experience.

Substitutes for Military CRNA Care

Substitutes for anesthesia care by military CRNAs include care by military anesthesiologists, civilian CRNAs, and civilian anesthesiologists. These substitute providers are hired by the military in a variety of ways. Current methods include the civil service system, the Civilian Health and Medical Program of the Uniform Services (CHAMPUS) Partnership agreements, and personal services contracts.

Department of Defense employees are hired on what is known as the general schedule (GS) and are paid a straight salary based on job requirements, skills, and length of service.

A personal services contract is entered into between the Services medical contracting office and an individual provider. For all practical appearances, it makes the individual appear to be a government employee.

An internal CHAMPUS Partnership is an agreement between the DoD facility commander and an individual or group of individuals where the government has excess capacity (i.e., space, supplies and or ancillary and professional staffing which is not being utilized to its full potential). The DoD provides overhead and, depending on the negotiated contract, may or may not provide ancillary services. The professional practice is provided at the negotiated rate. The provider is responsible for billing CHAMPUS for the professional services rendered.

If the anesthesia provider shortage in a facility warrants, a beneficiary may be given a nonavailability statement to have an episode of care provided in the civilian community (hospital or other medical treatment facility) and paid for by CHAMPUS. A non-availability statement permitting a beneficiary to get CHAMPUS-paid care outside the military direct care system costs more than an episode of anesthesia care provided in the military facility. In addition to the charge for the anesthesia provider, a surgeon and a facility charge are also incurred.

In collecting data for this study, it was found that the impact of a new requirement for obstetrical anesthesia, with no additional resources added, was being faced by the anesthesia departments in the military. The new requirement is a result of a October 1, 1992 mandate by the Assistant Secretary for Defense (HA).

The U.S. Air Force requested a CHAMPUS Partnership agreement for obstetrical anesthesia at Eglin Air Force Base, that would result in a straight CHAMPUS cost avoidance of \$400,000. In reviewing the impact of the new mandate, it was estimated that 20% of the 1200 expected deliveries would request obstetrical anesthesia in fiscal year (FY) 94. The current anesthesia provider staffing could not support this increase in demand for services. The inability to provide this service will require that beneficiaries be given a nonavailability statement. The average cost to CHAMPUS for this service in this local area is estimated to be \$4,038 compared to the approximate in-house cost of \$2,055 for the same service. Although, the average civilian CRNA cost for service is \$334, the Air Force negotiated a rate of 70% or \$234 per service with a local nurse anesthetist group.

This shows the importance of cost evaluation of the product line when determining the most cost efficient way to provide care. The cost of substitute CRNA care is very expensive. Contracts and agreements need to be carefully reviewed and well negotiated to get the most for the taxpayers' dollars.

Appendix B, Table 2 is a chart of pay based on different job arrangements by year, based upon a American Association of Nurse Anesthetist annual survey. This clearly shows the variety of work arrangements and the increase in salaries over the past 5 years.

A 1992 survey of U.S. Army Hospitals in Health Service Command (HSC) found that only eight of 22 general schedule (GS-12) CRNA positions with an approximate salary of \$51,000 per year were filled. This survey reported that the shortage was the result of the lack of salary competitiveness. As a result, ten personal services with an average salary of \$89,145 contracts were written to fill the vacancies caused by the shortage of military and civilian CRNAs.

The CRNA CHAMPUS Partnership Program within Health Services Command cost \$4,178,165. This is an average cost of \$125,528 for each of the 27 CRNA agreements. The CHAMPUS CRNA Partner usually provides care, Monday through Friday with no call, to patients who are CHAMPUS beneficiaries.

Table 2, in Appendix C, is a cost comparison of anesthesia services by civilian nurse anesthetists based on the type of employment agreement entered into by Health Services Command. The figures listed in the table show that salaries under personal services contracts and the CHAMPUS Partnership agreements far exceed what is currently being paid to the military nurse anesthetists. The Navy, at San Diego Naval Hospital, submitted a request for a proposal (RFP) for a CRNA, forty hours a week with no call, in the fall of 1993. The low bid came back at \$120,000.²⁷ No

²⁷Telephone interview with Commander Dan Wassnzechak, Administrative Resident, Naval Hospital San Diego conducted by Maj Patricia M. Boone in February, 1994.

contract was awarded.

According, to the salary information on anesthesiologists from the Hay Physician Salary Survey, the average anesthesiologist's salary in spring of 1993, based on 434 anesthesiologists responding to the survey, is \$201,900.²⁸ This is an increase from \$186,516 in the 1991-1992 survey. The 1993 weighted average pay for a military anesthesiologist which is based on the regular military compensation (RMC) per the number of anesthesiologists at each pay grade, DoD wide, combined with additional specialty pay and variable specialty pay, is \$82,759.²⁹ Anesthesiologists also add to this the four year multiple specialty pay (MSP) of \$8,000 and incentive specialty pay of \$26,000 for average total military earnings of \$116,759. The salary range for military anesthesiologists is from \$100,690 to \$146,500, if all available bonuses are taken.³⁰

Table 9 is a comparison of the average pay for CRNAs and anesthesiologists. Knowledge of these differences is necessary, in order to make cost effective procurement and personnel decisions. It also clearly shows the cost-benefit of military CRNA staffs.

²⁸ Hay Salary Survey, 1993.

²⁹ Annual Department of Defense Physician Pay Study 1993.

³⁰ Data taken from the DoD(HA) FY 94 Physician Special Pay Plan.

Table 9
Comparison of CRNA and Anesthesiologist Pay,
Military & Civilian.

Average Pay for Certified Registered Nurse Anesthetists and
Anesthesiologists

<u>CRNA</u>		<u>Anesthesiologists</u>	
<u>Military</u>	<u>Civilian</u>	<u>Military</u>	<u>Civilian</u>
\$62,072	\$121,725*	\$116,759	\$201,900.

- * Based on HSC 1992 survey.
- ** CRNA Civilian Pay is based on a hospital based CRNA from AANA's survey covering calendar year 1991 is \$81,647.
- *** Military pay is based on 1994 RMC plus bonuses.
- **** Civilian Anesthesiologist pay taken from 1993 Hay Study.

Appendix D, Tables 4 and 5 show the average pay DoD wide for the military CRNAs based on current ranks (March 1994) and 1994 RMC.

Recent studies of clinical outcomes do not demonstrate significant differences between care provided by CRNAs and by anesthesiologists.³¹ CRNA care is cost effective when compared to anesthesiologist care. "Nurse anesthetists and

³¹Ouellette, Richard G. Letter to Dr. Mendez, Assistant Secretary of Defense (Health Affairs) as President of the American Association of Nurse Anesthetists. March 29, 1990.

anesthesiologists have their own unique expertise, but in the areas of overlapping functions of anesthesia and resuscitation capabilities, they are interchangeable".³²

Costs

Care provided by military CRNAs is cost effective (i.e. it is less costly than care provided by anesthesiologists or civilian CRNAs), who are paid a higher salary than DoD CRNAs. Research supports the fact that there is no evidence that the quality of care is better or worse depending on the practitioners' training. Civilian CRNAs as an alternative to military CRNAs are more cost effective than anesthesiologists, even given the great variation in civilian CRNA compensation.

The 1992 CRNA pay survey performed by Health Services Command showed the difference between the general schedule (GS) CRNA and the CRNA CHAMPUS Partnership agreements to be approximately \$75,000, 150% of a GS employee's wages.³³

A military physician costs the DoD from \$48,137 to \$57,137 more, depending on his/her specific pay grade, than a military CRNA. (See Table 6 and Chart 1, Appendix E and Table 7, and Appendix F, for a comparison of military CRNA

³²Ibid.

³³Payne, Lieutenant Colonel Cary J. Information Paper: CRNA Special Pay Active Duty versus Contract. Department of the Army Office of the Surgeon General. August 31, 1993.

to anesthesiologist's salary and bonuses). Still, the Navy is filling some CRNA positions with anesthesiologists.³⁴ If the DoD increases the ISP from \$6,000 to \$15,000 and military CRNA positions were filled with CRNAs, the average saving per position would be \$45,687. The \$45,687 represents the difference between the average CRNA salary with a \$15,000 ISP compared to a the average anesthesiologist's salary and bonuses.

Educational Costs

The educational expense to train CRNAs and the problems inherent in increasing the number of students being trained affect the civilian and military communities. In a 1988 report to Congress, the educational cost of military CRNA training was estimated to cost \$63,000. According to Major Norma Garret³⁵, an instructor at the U. S. Army Nurse Anesthetist Training Program, the estimated FY 93 cost for the first year of training per student is \$66,000 and includes the student's and instructors' military pay and allowances; phase II cost per student in the second year is \$10,200 and excludes military pay and allowances for

³⁴Discussion with Captain Henderson, U.S. Navy Nurse Corps in meeting to discuss results of Certified Registered Nurse Anesthetist Incentive Specialty Pay Study by Dr. Bircher on May 1, 1994.

³⁵Telephonic interview with Major Norma Garrett, Instructor U.S. Army Nurse Anesthetist Training Program affiliated with the University of Texas at Houston School of Nursing conducted by Major Patricia M. Boone September 9, 1993.

students and instructors. These cost figures are obviously low in that they do not include the salaries of staff and students in Phase II, and the permanent change of station moves for both Phase I and II.

Will increasing the CRNA ISP solve the problem?

According to the DoD CRNA Incentive Specialty Pay Study completed in March, 1994, prepared by Dr. John Bircher, an OASD(HA) statistician, increasing the ISP to \$15,000 for military CRNAs, after completion of a four-year obligation for training, will increase CRNA retention. The study utilizes an elasticity methodology based on compensation for determining how long an individual will be retained in the military after completion of CRNA training. The results of Dr. John Bircher's elasticity study, increasing the military CRNA ISP to \$15,000 would increase current retention of military CRNAs by 21 percent. The increase in the incentive pay of \$9,000 would increase the current earning ratio by 16 percent. With the increase in the CRNA ISP, the military to civilian CRNA earning ratio is .78. The salary increase for military CRNAs is still considerably less than that of the civilian CRNA counterparts.

The Cost Of Increasing The Military CRNA ISP To \$15,000

There are currently two proposals on how the \$15,000 bonus will be allocated if approved. The first proposal is

that all military CRNAs would be authorized \$15,000 per year. The second proposal, which Dr. Ed Martin, Acting Assistant Secretary of Defense (Health Affairs) approved, is that military CRNAs would be authorized \$15,000 after completion of initial obligation for training. If the first proposal is approved and assuming all 529 military CRNAs on active duty take the ISP, the increased budgetary dollars needed for FY 95 would be \$9,000 times the number of CRNAs or \$4,761,000 additional budget dollars. If the military pays the additional \$9,000 ISP only after completion of 4 years obligation for basic CRNA training, as of 1 April 1994, there are 293 personnel completing their obligation for training who will be ineligible at this time for the additional \$9,000 ISP. The estimated cost of increasing the bonus under this proposal would be \$2,124,000. It should be noted that these estimates do not include any resignations or retirements.

Appendix H, Table 8, explains the cost of increasing the ISP for CRNAs who have completed their four-year obligation for training, and it also explains the Services shortfall budget for FY 95.

If the DoD does not increase the military CRNA ISP, an increasing shortage of military CRNAs will cause costs to increase and access to anesthesia care, which impacts on availability of surgery, will be reduced for military beneficiaries. The increasing shortage of CRNAs will also

impact on the ability of the military hospitals to provide emergency services.

As retention of military CRNAs increases, the decrease in demand for civilian CRNAs and CRNA substitutes will open up salary negotiations and allow us to contact providers and care at a lower price. If the expected increase in retention is achieved, the DoD should be able to reduce CHAMPUS Partnership agreements, expensive contracts, and other high cost substitutes for CRNA care. The increase in ISP under either proposal could then pay for itself.

CHAPTER IV

DISCUSSION

The Current Legislative Situation

In the fall of 1993, the 103rd Congress appropriated \$1.41 million for the increase in the CRNA ISP. However, the Office of the General Counsel, DoD, determined that this funding provision of Public Law No. 103-109-Defense Appropriations Act did not provide authority to amend the specific provision of Title 37, U.S. Code, which authorizes the DoD to pay the ISP to military CRNAs. Therefore, notwithstanding the provision of the referenced Act, the DoD did not have the required legal authority to increase the \$6,000 ISP ceiling specified in Title 37 of the U.S. Code.

The DoD(HA) submitted, in the Defense Health Program FY 1995 Budget Estimate Submission, a legislative proposal to increase the CRNA ISP from \$6,000 to \$15,000. The proposal was defended by DoD(HA) to the Office of Management and Budget (OMB) in a briefing and with specifically requested documentation. Major Patricia Boone, in conjunction with Dr. John Bircher, Colonel Scott Garner, and Mr. Joe Salko from HA, prepared requested documentation and briefed Mr. Jim Fish and others from OMB. Additionally, the OMB

requested civilian salary information from the American Association of Nurse Anesthetists. Because the OMB is responsible for doing the Executive Branch program analysis and budget evaluations, its support is imperative to facilitate the passage of the legislative proposal.

The current CRNA ISP authority of \$6,000, first authorized in FY 90, has been extended annually through September 30, 1995. The DoD(HA) submitted legislation to the Second Session of the 103rd Congress (1994) that would make the CRNA ISP permanent and increase it from \$6,000 to \$15,000. The OMB indicated it would not support legislation to make the CRNA ISP permanent. The OMB revised this legislative proposal to extend the CRNA ISP for three more years through September 30, 1998.

On April 22, 1994, Senate Bill 2182 was passed and sent to the House to authorize appropriations for fiscal year 1995 for the DoD. This legislation prescribes the military personnel strengths for FY 95, and under Title VII of the U.S. Code, Health Care Reform, Subtitle B, "Personnel Matters"; Section 711, sets the military CRNA ISP at \$15,000. The \$15,000 represents the \$9,000 increase that DoD(HA) requested.

The salary of civilian CRNAs, in addition to other medical specialties, was recognized as uncompetitive in the civilian marketplace, therefore, the DoD Civilian Personnel requested authority to pay higher salaries. In April 1994,

the DoD was authorized to grant special salary rates, using Title 38, U.S. Code, for certain medical occupations including civilian CRNAs, due to the significant problem with recruitment and retention of CRNAs. Department of Defense Civilian Personnel Management Service has developed the procedures to request special salary rates for CRNAs that are competitive with the Veterans Affairs (VA) rates and the local private sector salaries. Additionally, the military healthcare system will be allowed to use recruitment, relocation, and retention bonuses to recruit and retain civilian CRNAs. This may alleviate some of the shortage of CRNAs in the military health care system, however, the salary disparity between civilian and military CRNAs may increase. The Services may consider having all civilian CRNA staffs at some facilities and all military CRNA staffs at others. This arrangement could be disadvantageous if military CRNAs were deployed because facilities could be left with little or no anesthesia coverage until arrangements to backfill the facility were completed.

The DoD(HA) Shortage And Cost of CRNAs

The shortage of military CRNAs requires the DoD to provide expensive, substitute CRNA care. This problem could be decreased or eliminated if the CRNA ISP increase to \$15,000 is approved. The increase in the CRNA ISP is

expected to increase retention by 21%.

The disparity in pay and job requirements would be reduced because of the increased ISP of the military CRNA and the decreased need for expensive CHAMPUS Partnership agreements and personal services contracts. The average CRNA salary under the CHAMPUS Partnership agreements exceeds not only the military CRNAs salary but also that of the average military anesthesiologist. The personal services contracts are paying civilian CRNA providers at least what the military pays the senior leadership in the military CRNA specialty. These contracts do not require the civilian CRNAs to accept the same responsibilities required of the senior military CRNAs.

CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

Conclusion

It is recommended that the military CRNAs' ISP be increased to \$15,000 now. This will be a \$9,000 increase. A reevaluation of the civilian personal services contracts and the CHAMPUS Partnership agreements needs to be done. With the increase in military CRNA retention resulting from the increase in the ISP, the number of personal services contracts and CHAMPUS Partnership agreements needed will decrease. With the decrease in the number of contracts and agreements needed, it may be possible to negotiate the remaining contracts and agreements at a lower cost. Any decrease in the number and cost of these contracts and agreements will offset a portion of the cost of the increase in CRNA ISP.

As stated earlier, the cost of CRNA training by the 1988 Report to Congress was \$63,000.³⁶ The current cost for the U.S. Army is in excess of \$76,000. It is cost effective

³⁶Health Professionals Special Pay Study. Report to Congress on Armed Forces Health Professionals Military Nurse Corps. Department of Defense(Health Affairs) & (Force Management and Personnel), Army, Navy, Air Force and the United States Public Health Service. December 1988.

for the DoD to retain CRNAs, if a 21% increase in retention can be obtained by increasing the ISP \$9,000 to \$15,000. The marginal cost to the DoD for increasing the CRNA ISP per CRNA retained is approximately \$51,400, which is much less than the cost of training a military CRNA.

The Services could promote CRNAs to fill authorized slots or billets. The CRNA should meet the requirements for promotion but the Services could waive the time in grade requirements. Military CRNAs records should be compared to other military CRNAs, not to other nurses who have different opportunities for leadership positions and military education.

Civilian pay for CRNAs within military facilities needs to stay within a range comparable to that of military CRNAs'. If, DoD is unable to recruit civilian CRNAs at this rate, the job descriptions need to be evaluated to provide more equity of responsibility based on salary between civilian and military CRNAs. Civilian CRNAs in the facility are on a special pay scale, so the increase in responsibility would not equal an increase in salary as it would in the case of a normal GS employee.

The average cost of hiring a civilian CRNA, if one can be hired at all, is between \$80,000 and \$120,000. The increase in ISP could pay the salary of between 18 and 27 civilian CRNAs, excluding costs for recruiting, hiring, and hospital orientation. If DoD is at full strength with

military CRNAs, there should be less need for the more costly civilian contracts and CHAMPUS Partnerships.

The increase in the CRNA ISP to \$15,000 is a start, the CRNA ISP and the civilian marketplace should be evaluated annually like the physicians' bonus system is. Adjustments to the CRNA ISP, based on supply and demand and current civilian, CRNA pay, will continue to help the Services meet their authorized strength of military CRNAs in a cost effective manner.

Recommendations For Future Study

The following actions will assist the health care administrator in making better decisions to provide a cost effective, quality, accessible anesthesia care in the future. These actions include (a) comparing anesthesiologists' and CRNAs' productivity; (b) surveying Department of Defense military CRNAs who have left the military to determine the reasons why they left; (c) undertaking a follow-up study to determine the actual effect of the CRNA ISP, providing it is increased to \$15,000, on retention; (d) updating the CRNA civilian pay scale with the American Association of Nurse Anesthetist 1993 survey results; and (e) continue the salary trend analysis comparing civilian to military CRNA pay.

REFERENCES

- Adams, Nancy R. 1993. Memorandum 24 Mar 93 to Assistant Secretary of Defense (Health Affairs) requesting Amendatory Legislation to increase Nurse Anesthetist Incentive Special Pay. Department of the Army Office of the Surgeon General.
- Bankert, Marianne. 1989. Watchful Care: A History of America's Nurse Anesthetists. Continuum Publishing Co. New York.
- Bircher, John J. 1986. Physician and Dentist Retention. The Health Studies Task Force, Office of the Assistant Secretary for Defense (Health Affairs).
- Bircher, John J. and Ronald A Redman. 1987. The cost of physician accessions. The Health Studies Task Force. Office of the Assistant Secretary of Defense (Health Affairs).
- Bircher, John J. 1994. Certified Register Nurse Anesthetists Incentive Special Pay Study. Office of the Assistant Secretary of Defense (Health Affairs).
- Cromwell, Jerry and Margo Rosenbach. The Impact of Nurse Anesthetists on Anesthesiologist Productivity. Medical Care. Vol 28, 2 (159-169).
- Emory, C. William. 1985. Business Research Methods. Irwin, Inc. Homewood, IL.
- Health Professionals Special Pay Study. 1988. Report to Congress on Armed Forces Health Professionals Special Pays. Department of Defense-Health Affairs & Force Management and Personnel, Army, Navy, Air Force and the United States Public Health Service. December.
- Health Professionals Special Pay Study. 1988. Report to Congress on Armed Forces Health Professionals Military Nurse Corps. Department of Defense-Health Affairs & Force Management and Personnel, Army, Navy, Air Force and the United States Public Health Service. December.

- Health Professionals Special Pay Study. 1989. Report to Congress on Armed Forces Health Professionals Special Pays Other Health Care Providers. Department of Defense-Health Affairs & Force Management and Personnel, Army, Navy, Air Force and the United States Public Health Service. June.
- Kennedy, Terris Col. 1993. Information Paper-Retention issues. Department of the Army Office of the Surgeon General. 26 July.
- Kennedy, Terris Col. 1993. Information Paper-Readiness Analysis on Certified Registered Nurse Anesthetists. 20 August. Department of the Army Office of the Surgeon General.
- Johnstone, Robert E. and Cindy L. Martines. 1993. Costs of anesthesia. Anesthesia and Analgesia. 76(4)840-848.
- Office of the Assistant Secretary of Defense (Health Affairs). 1990. Report on Military Use of Registered Nurse Anesthetist for the Senate and House Committees on Armed Services. April.
- Ouellette, Richard G.; 1990. Letter to Dr. Mendez, Assistant Secretary of Defense (Health Affairs) as President of the American Association of Nurse Anesthetists. March 29.
- Payne, Cary J. LTC. Information Paper: CRNA Special Pay Active Duty versus Contract. 31 August 1993. Department of the Army Office of the Surgeon General.
- Pollock, Gail S. 1988. Information Briefing -1988 Anesthesia Survey.
- Rand Analysis on Military Compensation, 1990.
- Raub, William. 1990. Study of Nurse Anesthesia Manpower Needs. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Center for Nursing Research. February.
- Rivera, Victor. 1993. Statement of the American Association of Nurse Anesthetists before the House Appropriations Committee Department of Defense Subcommittee regarding Fiscal Year 1994 Appropriations. 6 May.
- University of Texas Medical Branch at Galveston. 1992 National Survey of Hospital and Medical School Salaries. October.

APPENDIX A

COMPARISON OF MILITARY AND CIVILIAN CRNAS

COMPARISON OF MILITARY AND CIVILIAN CRNAs

MILITARY CRNA

Education:

Prepared at Master's level

Scope of Practice:

All types of general anesthesia, regional, and monitored local anesthesia

All ages and categories of patients from premature infants to geriatric population

Level of Supervision:

Must be capable of autonomous practice in remote locations

Equipment:

Proficient with state of the art equipment as well as specialized austere mobilization anesthesia equipment

Additional Duties:

Multiple administrative duties
Teaching and supervision of anesthesia students
Leadership and supervisory roles
Continuing professional education

Military Duties:

Physical fitness tests
Height & weight standards
Readiness posture for mobilization
Military education

Work Hours:

60 to 80 hours per week; on-call every 2 to 3 days; field or ship duty as required

Salary:

\$47,751 (O-3 with 6 years TIS) to \$84,678 (O-6 with 22 years TIS) pay and allowances; no opportunity for overtime or on-call pay (\$6,000 ISP is not reflected in salary)

CIVILIAN CRNA

Education:

Master's degree required for entry to nurse anesthesia practice starting in 1998

Scope of Practice:

Basic: general anesthesia; additional training often required for other types

Basic: adult patients; additional training often required for pediatric practice

Level of Supervision:

Basic: close to moderate supervision; relatively autonomous practice requires additional training or experience

Equipment:

Proficient with state of the art equipment used in fixed medical facilities

Additional Duties:

Basic: Continuing professional education; additional responsibilities such as administration, supervision or teaching is negotiated

Military Duties: None

Work Hours:

Basic: Average 40 hours per week; overtime and on-call negotiated

Salary:

Basic: \$60,000 to \$184,000 (paid by Health Services Command for CHAMPUS partner); overtime and on-call pay; additional pay for increased levels of responsibility and expanded scope of practice

Adams, Nancy R. Memorandum 24 Mar 93 to Assistant Secretary of Defense (Health Affairs)
Requesting Amendatory Legislation to Increase Nurse Anesthetist Incentive Specialty
Pay. Department of the Army Office of the Surgeon General. March 24, 1993.

APPENDIX B

TABLE 2: CRNA CIVILIAN PAY SCALE

Civilian CRNA Salaries

Average CRNA's pay by Work Arrangement per AANA's Survey

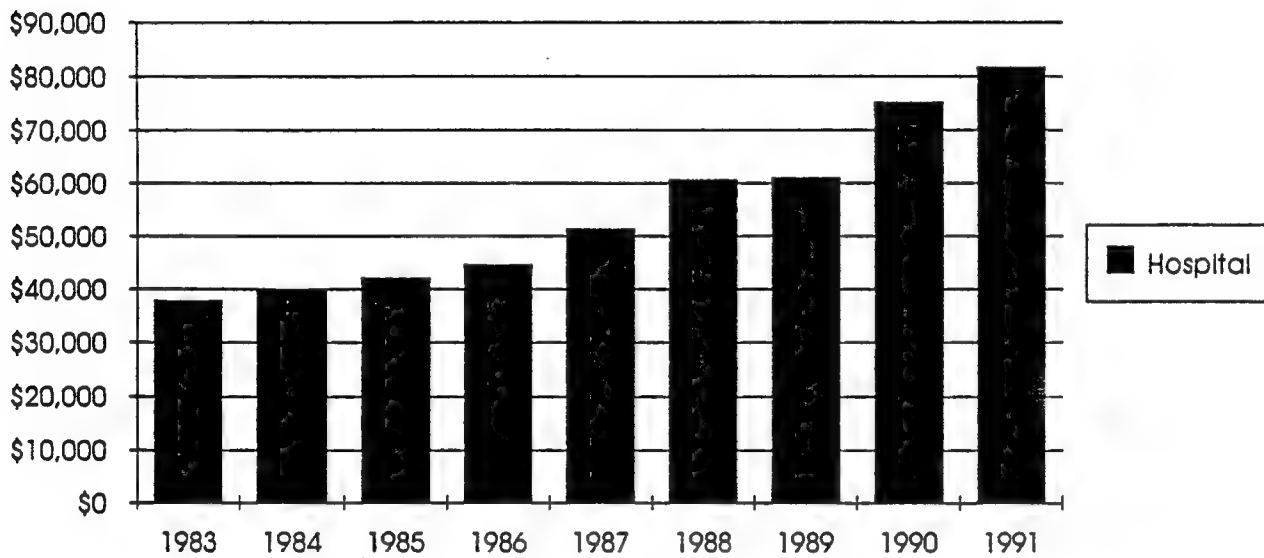
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Hospital	\$37,848	\$39,940	\$42,143	\$44,571	\$51,325	\$60,622	\$61,003	\$75,233	\$81,647	Data	
University	\$38,815	\$41,114	\$41,847	\$47,316	\$50,083	\$57,199	\$59,203	\$71,340	\$77,060		unavailable
CRNA/MDA Group	\$37,409	\$39,684	\$41,450	\$43,821	\$50,957	\$59,112	\$59,003	\$71,079	\$77,199		
Freelance	\$50,391	\$54,509	\$56,250	\$62,788	\$76,811	\$76,089	\$88,057	\$111,377	\$99,811		
CRNA Group	\$47,185	\$50,806	\$53,973	\$58,498	\$72,362	\$76,089	\$75,129	\$105,319	\$99,639		
Office/Surgicenter	\$36,780	\$36,901	\$40,046	\$41,192	\$51,467	\$55,282	\$56,587	\$69,115	\$71,165		
Other	\$35,714	\$42,401	\$45,987	\$46,165	\$53,366	\$52,939	\$52,943	\$91,447	\$87,509		

*Range of bonuses in civilian employment setting for 1990-1991 adds \$3,827-\$18,845 to salaries

CRNA									\$ 6,000 bonus added to salary starting FY9C		
MILITARY PAY											
(RMC-0-4 10 YRS)				\$44,000	\$44,200	\$44,600	\$46,400	\$53,691	\$55,589	\$57,629	\$60,343

Table 2: CRNA Civilian Pay by work arrangement based on AANA's Survey and CRNA Military Pay
(Military CRNA based on RMC for 0-4)

CIVILIAN CRNA PAY



Trend analysis of Hospital CRNA civilian base pay
1983-1991.

APPENDIX C

TABLE 3: COMPARISON OF CIVILIAN PAY METHODS

Appendix C

COMPARISON OF THREE CIVILIAN CRNAS PAY METHODS

	Number	Salary	Total Wages
General Scale	8	\$51,000	\$408,000
Personal Services	10	\$89,145	\$891,450
CHAMPUS Partnership	27	\$125,528	\$4,178,165
TOTAL	45		\$5,477,615
Average Salary		\$121,725	

Table 2: Comparison of CRNA Civilian Pay Methods

APPENDIX D

TABLE 3: AVERAGE PAY DoD WIDE FOR MILITARY CRNAS

Appendix-D

Average Pay DoD Wide For Military CRNAs

	ARMY	NAVY	AIR FORCE	DOD	Total Pay & Bonuses	
0-6	3	2	2	7	\$89,500	\$626,500
0-5	44	24	29	97	\$76,750	\$7,444,750
0-4	73	51	87	211	\$64,330	\$13,573,630
0-3	97	47	79	223	\$52,690	\$11,749,870
					Average Pay	
Total	217	124	197	538	\$62,072	\$33,394,750

Table 4: Average Military CRNA RMC Including Bonus

* Selected Military Compensation Tables January 1993 Pay Rates, Table C-4

Average Pay by Service for Military CRNAs

CRNA	ARMY	Total Pay & Bonuses	
0-6	3	\$89,500	\$268,500
0-5	44	\$76,750	\$3,377,000
0-4	73	\$64,330	\$4,696,090
0-3	97	\$52,690	\$5,110,930
		Average Pay	
Total	217	\$61,993	\$13,452,520

CRNA	Navy	Total Pay & Bonuses	
0-6	2	\$89,500	\$179,000
0-5	24	\$76,750	\$1,842,000
0-4	51	\$64,330	\$3,280,830
0-3	47	\$52,690	\$2,476,430
		Average Pay	
Total	124	\$62,728	\$7,778,260

CRNA	AIR FORCE	Total Pay & Bonuses	
0-6	2	\$89,500	\$179,000
0-5	29	\$76,750	\$2,225,750
0-4	87	\$64,330	\$5,596,710
0-3	79	\$52,690	\$4,162,510
		Average Pay	
Total	197	\$61,746	\$12,163,970

APPENDIX E

TABLE 5: AVERAGE PAY BY SERVICES FOR MILITARY CRNAS

TABLE 6: MILITARY PAY AND BONUS COMPARISON OF CRNAS
VS ANESTHESIOLOGISTS

CRNA and ANESTHESIOLOGIST PAY COMPARISON

MILITARY PAY AND BONUS COMPARISON

GRADE	CRNA Total Pay & Bonuses	Anesthesiologist	Difference
0-3	\$52,690	\$100,827	(\$48,137)
0-4	\$64,330	\$121,467	(\$57,137)
0-5	\$76,750	\$133,887	(\$57,137)
0-6	\$89,500	\$146,637	(\$57,137)

Table 6

CRNA and ANESTHESIOLOGIST PAY COMPARISON

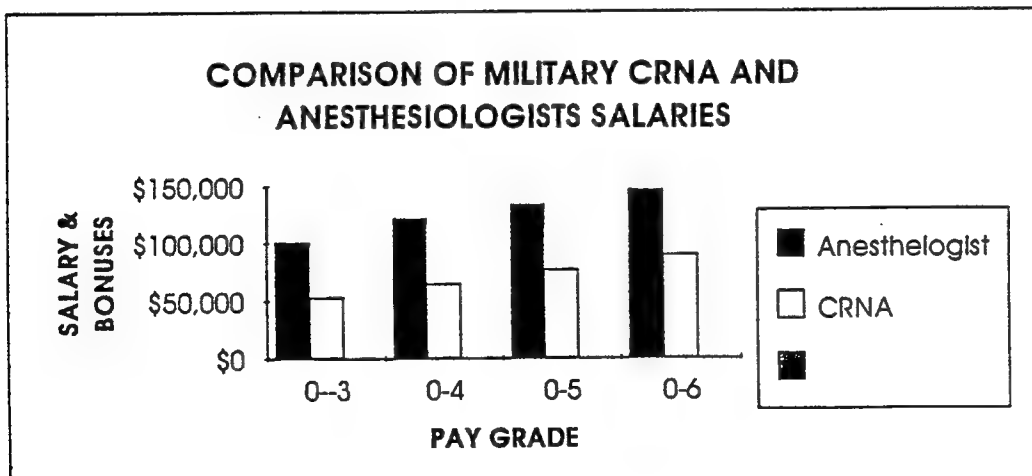


Chart 1

APPENDIX F

TABLE 7: MILITARY PAY: CRNA VS ANESTHESIOLOGISTS

Appendix F

MILITARY PAY CRNA vs ANESTHESIOLOGIST

Military CRNA			Military Anesthesiologist					
	RMC*	Bonus	Total	RMC	Bonuses* ASP/VSP & BCP	4 yr MSP	ISP	TOTAL
CPT/LT	\$46,690	\$6,000	\$52,690	\$46,690	\$20,000	\$8,000	\$26,137	\$100,827
MAJ/LCDR	\$58,330	\$6,000	\$64,330	\$58,330	\$29,000	\$8,000	\$26,137	\$121,467
LTC/CDR	\$70,750	\$6,000	\$76,750	\$70,750	\$29,000	\$8,000	\$26,137	\$133,887
COL/CAPT	\$83,500	\$6,000	\$89,500	\$83,500	\$29,000	\$8,000	\$26,137	\$146,637

RMC* is regular military compensation (base pay and allowances) taken from Selected Military Compensation Tables, January 1993, Table C-4.

Bonuses*-Military anesthesiologists receive the following specialty pays:

Additional , variable , board certification , multiyear ,and incentive.

Assumption: Military Anesthesiologists are board certified at the rank of Major and above.

Table 7

APPENDIX G

TABLE 8: ESTIMATED CRNA BONUS FOR FISCAL YEAR 1995

Estimated CRNA Bonus for FY95

Appendix G

INCENTIVE SPECIALITY PAY FOR CRNAS

SERVICE	FY95 Requested #	Budgeted \$ (000)	FY 95 CRNA Inventory (Projected)	Less Completing 4 yr Training Obligation *	Total \$ needed For Increased Bonus (000)	Current Shortfall (000)
ARMY	309 @ \$6,000	\$1,854	215	115	\$2,190	\$336
AIR FORCE	258 @ \$6,000	\$1,548	198	114	\$1,944	\$396
NAVY	132 @ \$15,000	\$1,980	132	64	\$1,404	none

* Actual # graduated over last 4 years

** Estimated Shortfall of \$ 732,000. for the Army and Air Force based on projected FY 1995 Inventory

Table 8: Estimated CRNA ISP Bonus for FY 95 If approved after 4 yr obligation